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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/961,273	09/25/2001	Naoya Hashimoto	Q65705	8063

7590 07/02/2004  
SUGHRUE, MION, ZINN, MACPEAK & SEAS  
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EXAMINER	
ROJAS, BERNARD	
ART UNIT	PAPER NUMBER
2832	

DATE MAILED: 07/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<p align="center"><b>Office Action Summary</b></p>	<b>Application No.</b> 09/961,273	<b>Applicant(s)</b> HASHIMOTO ET AL.	
	<b>Examiner</b> Bernard Rojas	<b>Art Unit</b> 2832	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 June 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1 and 7-18 is/are pending in the application.
- 4a) Of the above claim(s) 2-6 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 7-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION*****Response to Arguments***

Applicant's arguments filed 06/21/04 have been fully considered but they are not persuasive.

In regard to claim 1, Applicant states that the Examiner has not established where an electromagnetic device body is taught in the prior art. For at least this reason, claim 1 should be deemed patentable. Examiner disagrees since the electromagnetic device body consists of the entire structure of the coil as shown in figure 1. Furthermore, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. The epoxy adhesive [4] covers the super conducting wire thereby protecting it from being *directly* subjected to molding pressure. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963).

Applicant has not required the specific limitation of injection molding the cover. The claim merely states "wherein said cover member protects said coil from being directly subjected to molding pressure when said cover is formed by injection molding, by covering said coil", in the example provided by Shibuta et al., the cover is not injection molded, but still reads on the claim.

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Claim 7, in response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the art of providing wire insulation is in question. Ghorashi et al. states his process for wire insulation yields a coated copper wire having as adherent coating which is resistant to water crazing and is stable at high temperatures [col. 1 lines 59-65]. Ghorashi et al. teaches a conductor wire coated with an insulative material having a thickness for 1 to 10 mils [col. 2 lines 42-46] that is magnitudes greater than the average size of a flash on a bobbin [0.01mm].

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the process of Ghorashi instead of a resin as disclosed by Shibuta et al. in order to obtain the improved insulative properties for the wire.

Claims 9-11 and 16, an electromagnetic coil is a fundamental element in an electromagnetic device such as actuators, solenoids, motors and valves. The specific design of the coil depends on the intended use and the specific environment in which the electromagnet is used, a motor, a valve of submerged in a fluid, is well known in the art.

Claim 17, Applicant states that the Examiner refers to epoxy based adhesive 4 which was previously cited for teaching the cover member of claim 1. However, upon viewing the epoxy based adhesive 4 in Fig 1, it is apparent to one of ordinary skill in the art that epoxy based adhesive 4 is not cylindrical. Therefore, claim 17 should be deemed patentable. The Examiner refers to cover [3] as being cylindrical as shown in figure 1.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1 and 8-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1 and 8-11 lack sufficient structure to perform the claimed function "wherein said cover member protects said coil from being directly subjected to molding pressure when said cover is formed by injection molding, by covering said coil."

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Shibuta et al. [US Patent #5,512,867].

Claim 1, an electromagnetic device body [figure 1] including a coil formed with a conductor [2] wound around the bobbin [1] and a cover member [4] enclosing the coil. A cover [3] for covering the electromagnetic device body. The cover member protecting the coil from directly subjected to molding pressure when the cover is injection molded.

Claim 18, an electromagnetic device body [figure 1] including a coil formed with a conductor [2] wound around a bobbin [1] and a cover member [4] enclosing said coil; and a cover [3] for covering said electromagnetic device body, wherein said cover member comprises a means for protecting said coil from being directly subjected to molding pressure when said cover is formed by injection molding, by covering said coil.

### ***Claim Rejections - 35 USC § 103***

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 7-11 and 14-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shibuta et al. [US Patent #5,512,867] in view of Ghorashi et al. [US Patent #5202187].

Claims 7, 14 and 15, Shibuta et al. discloses an electromagnetic device [figure 1] with a bobbin [1], a conductor [2] wound around the bobbin. The conductor has an outer coating [col. 1 lines 55-60].

Shibuta et al. does not disclose the thickness of the outer coating.

Ghorashi et al. discloses a conductor wire coated with an insulative material. The insulation disclosed is from 1 to 10 mils, at least 4 times larger than the average flash produced on a bobbin as disclosed by applicant.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the two teachings to provide a robust insulation that is stable to high temperatures and is resistant to water crazing, cracking and loss of coating [col. 1 lines 59-65].

Claim 8, Shibuta et al. discloses an electromagnetic device body including a coil formed with a conductor [2] wound around the bobbin [1] and a cover member enclosing the coil [4]. A cover for covering the electromagnetic device body [3].

Shibuta et al. does not disclose the thickness of the outer coating.

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Ghorashi et al. discloses a conductor wire coated with an insulative material. The insulation disclosed is from 1 to 10 mils, at least 4 times larger than the average flash produced on a bobbin as disclosed by applicant.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the two teachings to provide a robust insulation that is stable to high temperatures and is resistant to water crazing, cracking and loss of coating [col. 1 lines 59-65].

Claims 9-11 and 16, an electromagnet of this design is useful in many devices, the specific environment in which the electromagnet is used is a design choice based on the users requirements.

Claim 17, the cover member is cylindrical [figure 1].

Claims 7, 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shibuta et al. [US Patent 5,512,867] in view of Trunzo et al. [US Patent 3,676,814].

Claims 7, Shibuta et al. discloses an electromagnetic device with a bobbin [1], a conductor [2] wound around the bobbin. The conductor has an outer coating [col. 1 lines 55-60].

Shibuta et al. does not disclose the thickness of the outer coating.

Trunzo et al. discloses a conductor wire coated with an insulative material. The insulation disclosed is from 0.001 to 0.005 inches [col. 6 lines 50-60], at least 4 times larger than the average flash produced on a bobbin as disclosed by applicant.



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It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the two teachings to provide a robust insulation to prevent the coil windings from shorting.

Claim 12, Trunzo et al. teaches a coating for a coil wire composed of a welding layer that is made of thermoset epoxy; and an insulative layer that is made of enamel [abs, figure 1].

Claim 13, Trunzo et al. teaches a plurality of adjacent conductors, wherein said welding layer bonds said plurality of adjacent conductors to each other [figure 2B].

### ***Conclusion***


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bernard Rojas whose telephone number is (571) 272-1998. The examiner can normally be reached on M-F 8-4:00), every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Elvin G. Enad can be reached on (571) 272-1990. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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